

(23) No. In the equation $x^2 - 4x = 0$, $c = 0$,
 $a = 1$ $b = -4$ $c = 0$

(24) No. In the equation $x^2 - 7 = 0$, $b = 0$.

(25) $m^2 - m - 1 = 0$
 $a = 1$ $b = -1$ $c = -1$

$$m = \frac{1 \pm \sqrt{(-1)^2 - 4(1)(-1)}}{2(1)}$$

$$m = \frac{1 \pm \sqrt{1+4}}{2}$$

$$m = \frac{1 \pm \sqrt{5}}{2}$$

(26) $y^2 - 3y - 2 = 0$
 $a = 1$ $b = -3$ $c = -2$

$$y = \frac{3 \pm \sqrt{(-3)^2 - 4(1)(-2)}}{2(1)}$$

$$y = \frac{3 \pm \sqrt{9+8}}{2}$$

$$y = \frac{3 \pm \sqrt{17}}{2}$$

(27) $x^2 - 6x + 7 = 0$
 $a = 1$ $b = -6$ $c = 7$

$$x = \frac{6 \pm \sqrt{(-6)^2 - 4(1)(7)}}{2(1)}$$

$$x = \frac{6 \pm \sqrt{36-28}}{2}$$

$$x = \frac{6 \pm \sqrt{8}}{2}$$

$$x = \frac{6 \pm 2\sqrt{2}}{2} = 3 \pm \sqrt{2}$$

(28) $11p^2 - 7p + 1 = 0$
 $a = 11$ $b = -7$ $c = 1$

$$p = \frac{7 \pm \sqrt{(-7)^2 - 4(11)(1)}}{2(11)}$$

$$p = \frac{7 \pm \sqrt{49-44}}{22}$$

$$p = \frac{7 \pm \sqrt{5}}{22}$$

(29) $4z^2 - 12z + 11 = 0$
 $a = 4$ $b = -12$ $c = 11$

$$z = \frac{12 \pm \sqrt{(-12)^2 - 4(4)(11)}}{2(4)}$$

$$z = \frac{12 \pm \sqrt{144-176}}{8}$$

$$z = \frac{12 \pm \sqrt{-32}}{8}$$

$$z = \frac{12 \pm 4i\sqrt{2}}{8} = \frac{3 \pm i\sqrt{2}}{2}$$

(30) $x^2 = 2x - 5$

$$x^2 - 2x + 5 = 0$$

$$a = 1$$
 $b = -2$ $c = 5$

$$x = \frac{2 \pm \sqrt{(-2)^2 - 4(1)(5)}}{2(1)}$$

$$x = \frac{2 \pm \sqrt{4-20}}{2}$$

$$x = \frac{2 \pm \sqrt{-16}}{2} = \frac{2 \pm 4i}{2}$$

$$x = 1 \pm 2i$$

(31) $(\frac{1}{2}t^2 + \frac{1}{4}t - 3 = 0) \cdot 4$

$$2t^2 + t - 12 = 0$$

$$a = 2$$
 $b = 1$ $c = -12$

$$t = \frac{-1 \pm \sqrt{1^2 - 4(2)(-12)}}{2(2)}$$

$$t = \frac{-1 \pm \sqrt{1+96}}{4}$$

$$t = \frac{-1 \pm \sqrt{97}}{4}$$

(32) $(\frac{2}{3}x^2 + \frac{1}{4}x = 3) \cdot 12$

$$8x^2 + 3x - 36 = 0$$

$$a = 8$$
 $b = 3$ $c = -36$

$$x = \frac{-3 \pm \sqrt{3^2 - 4(8)(-36)}}{2(8)}$$

$$x = \frac{-3 \pm \sqrt{9+1152}}{16} = \frac{-3 \pm \sqrt{1161}}{16}$$

$$x = \frac{-3 \pm 3\sqrt{129}}{16}$$

(33) $(4 + \frac{3}{x} - \frac{2}{x^2} = 0) \cdot x^2$

$$4x^2 + 3x - 2 = 0$$

$$a = 4$$
 $b = 3$ $c = -2$

$$x = \frac{-3 \pm \sqrt{3^2 - 4(4)(-2)}}{2(4)}$$

$$x = \frac{-3 \pm \sqrt{9+32}}{8}$$

$$x = \frac{-3 \pm \sqrt{41}}{8}$$

Day 3 continued

Unit 8

$$(34) \left(4 - \frac{11}{x} - \frac{3}{x^2} = 0\right) x^2$$

$$4x^2 - 11x - 3 = 0$$

$$(4x + 1)(x - 3) = 0$$

$$4x + 1 = 0 \quad | \quad x - 3 = 0$$

$$4x = -1 \quad | \quad x = 3$$

$$x = -\frac{1}{4}$$

$$\{3, -\frac{1}{4}\}$$

$$(41) (m-3)^2 = 5$$

$$m-3 = \pm\sqrt{5}$$

$$m = 3 \pm \sqrt{5}$$

$$(44) \left(\frac{1}{3}x^2 + \frac{1}{6}x + \frac{1}{9} = 0\right) \times 18$$

$$6x^2 + 3x + 2 = 0$$

$$a=6 \quad b=3 \quad c=2$$

$$x = \frac{-3 \pm \sqrt{(3)^2 - 4(6)(2)}}{2(6)}$$

$$x = \frac{-3 \pm \sqrt{9-48}}{12}$$

$$x = \frac{-3 \pm \sqrt{-39}}{12}$$

$$x = \frac{-3 \pm i\sqrt{39}}{12}$$

$$(39) 8p^3 + 125 = 0$$

$$(2p+5)(4p^2-10p+25)=0$$

$$2p+5=0 \quad a=4 \quad b=-10 \quad c=25$$

$$2p = -5 \quad p = \frac{-10 \pm \sqrt{100-4(4)(25)}}{2(4)}$$

$$p = \frac{-5}{2} \quad p = \frac{-10 \pm \sqrt{-300}}{8}$$

$$p = \frac{-10 \pm 10i\sqrt{3}}{8}$$

$$p = \frac{-5 \pm 5i\sqrt{3}}{4}$$

$$\left\{-\frac{5}{2}, \frac{5+5i\sqrt{3}}{4}, \frac{5-5i\sqrt{3}}{4}\right\}$$

(40)

$$\left(2 - \frac{5}{k} + \frac{2}{k^2} = 0\right) k^2$$

$$2k^2 - 5k + 2 = 0$$

$$(2k-1)(k-2)=0$$

$$2k-1=0 \quad | \quad k-2=0$$

$$2k=1 \quad | \quad k=2$$

$$k = \frac{1}{2}$$

$$\left\{\frac{1}{2}, 2\right\}$$

$$(42) t^2 - t = 3$$

$$t^2 - t - 3 = 0$$

$$a=1 \quad b=-1 \quad c=-3$$

$$t = \frac{1 \pm \sqrt{(-1)^2 - 4(1)(-3)}}{2(1)}$$

$$t = \frac{1 \pm \sqrt{1+12}}{2}$$

$$t = \frac{1 \pm \sqrt{13}}{2}$$

$$(43) (3y+1)^2 = -7$$

$$3y+1 = \pm\sqrt{-7}$$

$$3y = -1 \pm i\sqrt{7}$$

$$y = \frac{-1 \pm i\sqrt{7}}{3}$$